Government of Madras.

PUBLIC WORKS DEPARTMENT.

IRRIGATION.

G.O., No. 182 I., 28th April 1909.

Duty of Water.

Stating that Government are making special arrangements for gauging canals and distributaries to ascertain the — ; requesting the Collector of Kistna to depute a suitable Revenue Inspector to collect statistics to show areas irrigated in each month under wet and dry crops in the Kistna Western division; and stating that further detailed instructions for the guidance of the Executive Engineer will be issued by the Chief Engineer for Irrigation.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Government of Madras.

PUBLIC WORKS DEPARTMENT.

IRRIGATION.

Recd.	1909.	*Enclosures*
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Order—No. 182 I., dated 28th April 1909.

With a view to improve the systems of distribution of water and especially to minimise waste of water, the Government are making special arrangements in the Public Works Department for gauging canals and distributaries in order to ascertain the "duty" of water, information regarding which is necessary to determine the areas which can be irrigated, not only under existing irrigation systems, but also under future projects.

2. For this purpose, statistics are required to show the areas irrigated in each month, under wet and dry crops, including—

(1) lands actually transplanted,
(2) lands used for seed beds, and
(3) lands finally watered for ploughing.

3. The Government propose to start the experiment of collecting such statistics in the Kistna Western division and are of opinion that the accuracy of the statistics can best be secured by placing an intelligent Revenue Inspector on special duty to work under the Executive Engineer of that division. The pay of the special Revenue Inspector will be fixed at Rs. 50 *per mensem* and his appointment will, for the present, be temporary for six months from the 1st May next. The Collector of Guntūr will be requested to depute a suitable Revenue Inspector for the purpose.

4. The Superintending Engineer, II Circle, is requested to submit for sanction a proposition statement for the appointment of the Revenue Inspector, who will be allowed a peon on Rs. 7.

5. The Chief Engineer for Irrigation should issue further detailed instructions for the guidance of the Executive Engineer.

(True Extract.)

C. A. SMITH,
Joint Secretary to Govt., P. W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, II Circle.
,, Examiner Public Works Accounts.
,, Revenue Department.
,, Board of Revenue (Revenue Settlement).
,, Collector of Guntūr.

DEPARTMENT.

NOTES CONNECTED WITH G.O., No. 182, I., DATED 28TH APRIL 1909.

PUBLIC WORKS DEPARTMENT.
(IRRIGATION BRANCH).

[SUBJECT.—*Note on Statement I.-E. in the Administration Report, Irrigation Branch.*]

This is one of the 13 statements ordered by the Secretary of State, to be appended to the Irrigation Revenue Reports; *vide* G.O., No. 673 I., dated 3rd August 1886. In G.O., No. 279 I., dated 26th March 1886, the Government of India at the instance of the Local Government gave permission to the statement being appended to the annual Administration Report, until a separate revenue report could be prepared for the Madras Presidency. Reviewing the Revenue Report of Irrigation works in Madras, the Government of India in their letter No. 78 I., dated 8th May 1890, printed with G.O., No 334 I., dated 18th June 1890, remarked that the use of the terms *Kharif* and *Rabi* in the statement was misleading and ordered the substitution of the terms *first crop* and *second crop* in their places respectively. The form accordingly altered was in use from 1889–1890 till 1897–1898 when an additional column was opened to show the quantity of water supplied per acre during the time the canals were open. Since that date no alterations have been made in it. This statement is quite useless to local Engineer Officers and is very misleading to others who are unacquainted with local conditions and attempt to draw deductions from the figures furnished in it.

2. The following are the principal causes which render the return useless:—

(1) Up to the present time the discharges through the head sluices have been very inaccurately measured. This is due to various causes all dependent on the fact that for many years in most of our systems there has been no special object to be gained by an economical distribution of water and the officers of the Department have, generally speaking, not had the power to enforce it even if they wished to. In consequence of this very little attention has been paid to the correct measurement of water entering our canals or leaving our reservoirs. Now that cultivation under our larger systems is reaching its limit the question of economical distribution becomes an important one and steps are being taken both by the construction of "gauging runs" and by the revision and checking of the calculated discharges to obtain really reliable discharge data. A great improvement in the accuracy of this portion of the return may therefore be expected at an early date.

(2) *Division of cultivation into first and second crop.*—This classification is quite unsuited to the requirements of Engineers in this Presidency and the mere substitution of these terms for *Kharif* and *Rabi* as mentioned above has done nothing to mend matters. In the first place there is no well-defined division between first and second crop, and in the next, in some cases the definition of these crops given in the foot-note of the statement does not agree with that adopted by the Revenue Department. For instance, in the Gódávari delta, during the first crop season a large area is grown without irrigation and after it is reaped, an irrigated crop is grown. This being the first irrigated crop is called the first crop although grown during the second crop season. Similarly in the Cauvery delta system, owing to the different methods of cultivation which exist, it is quite impossible to divide the season into first and second crop periods.

All statistics of this kind must be read with knowledge of local agricultural conditions. They are not for the man in the street.

N.E.M.

(3) It is at present impossible to show "amount of water utilized" and the duties can only be calculated on the discharge at the canal head; steps are being taken to measure as far as possible the water run to waste, but it is not likely that very reliable information will ever be obtainable under this head.

3. In order to make the statement more trustworthy and useful, it is suggested that for the purpose of working out "duties" the distinction between first and second crop be altogether given up and in its place a monthly cultivation and duty statement be substituted. For this purpose the Revenue Department will have to supply a statement of lands *actually under cultivation* during each month; the statement should include not only lands actually transplanted but also those used for seed beds and watered for ploughing, but the three need not be shown separately, *i.e.*, number of acres per cubic foot per second will then be struck for each month.

The crop period should be taken from date of first letting water into the fields until completion of harvest.

4. The total number of acres of first, second and double crop should be separately reported by the Revenue Department and may be shown in column 9 of the attached specimen form. The main object of this return is to show as accurately as circumstances will allow the number of acres irrigated by each foot of water. It will be seen from the foot-note to the form now in use that the figures in columns 2 to 6 include extent under withered crops and exclude waste charged. This is, of course, exactly the reverse of what is required, and in order to remove a small but obvious error, waste charged should be included and withered crops excluded.

The nature of the item waste charged is here misunderstood. The reference is to wet mamul waste.

N.E.M.

Revised Form I-E.—Statement of areas irrigated under (Major) Class I and Class II Works.

System.	Month.	Area under irrigation.	Average discharge in cubic feet per second.		Duty.		Total discharge utilized in millions cubic feet.	Total area irrigated.	Monthly rainfall average of stations on irrigated land.	Remarks.
			At head.	Utilized.	At head.	Utilized.				
1	2	3	4	5	6	7	8	9	10	11
	June .. .. July .. .. August .. .. September .. October .. .. November .. December .. January .. .. February .. March .. .. April .. .. May							Acres six months' crop. Acres four do. Acres ten do.		[*Note.*—Column 3 has not been divided into flow and lift as the accuracy of the figures given in some instances appears doubtful and as it does not serve any really useful purpose. If necessary, it may be sub-divided.]

5. This revised form will show the actual number of acres irrigated during each month and the amount of water used in doing so. The actual usefulness of this will depend on the accuracy of the figures supplied, but assuming them to be correct the return will be of the greatest use in showing not only the total quantity of water used but also the period and extent of maximum demand.

T. W. S. Smyth.
14-11-07.

H. E. Clerk.
14-11-07.

A note by the Chief Engineer for Irrigation is appended which, it is hoped, points out clearly the uselessness of the return in its existing form and suggests the adoption of another one. Will Revenue kindly say if the information asked for in paragraph 3 can be supplied for all major works and also the following minor works for which Capital and Revenue Accounts are kept:—

Cumbum tank.
Thadapalli channel.
Arkenkota channel.
Kalingaroyan channel.
Chembrambakkam tank.
Madras water supply and irrigation extension.

I do not think any further explanation is necessary and I need only add that it is hoped that all information furnished will be unimpeachable. An attempt to make use of the crop cultivation statements as published in the District Gazettes leads in some cases to hopeless confusion. If approved in Revenue, India will be asked to accept this form.

T.W.S.S.
14-11-07.

REVENUE DEPARTMENT.

To Under Secretary—

As the Board furnishes figures, accounts, etc., required for the Public Works (Irrigation) Department administration report, it is submitted that the opinion of the Board may be called for. Please see endorsement submitted for approval.

P G.S.
19-11-07.
S.S.
20-11-07.

Board of Revenue (Revenue Settlement) for favour of remarks.

D. T. CHADWICK.
21-11-07.

Copy of un-official reply from N. E. MARJORIBANKS, Esq., I.C.S., Director of Land Records, dated 16th January 1908.

I have spoken to karnams about this and to the only Tahsildar I met who had an intimate knowledge of village accounts. There is no statement or account now prepared which gives the area under irrigation each month, neither is there one which shows how long any particular part is under irrigation in any year. Village account No. I only gives the area cultivated and irrigated each month, *e.g.*, if a field is cultivated and irrigated in June, it is not repeated in the account for July or any subsequent month. Moreover, it is not written by sources. The adangal (No. 2) and account No. 2 D are both annual statements. What we are asked to do by the Public Works Department is, in effect, to prescribe for all fields under class I works and 6 other works a monthly adangal from which the areas monthly irrigated could be totalled and from which (by another posting) the areas under irrigation for different periods could be

Page 88 of G.O., No. 72, dated 10th January 1907.

ascertained. I need hardly say that the labour of compiling such an account would be immense. Not only would the scriptory work be great, but every field in the villages concerned would have to be inspected every month. Nothing less would provide the unimpeachable information asked for. If it is thought necessary to compile it, special karnams should be appointed for the purpose; existing establishments could not do the work honestly.

2. As regards the need for the information, I hesitate to say much, but would venture to suggest that this demand represents just that vain striving after mathematical accuracy in irrigation statistics that the Government of India and the Secretary of State expressly disowned many years ago—*vide* pages in Board's Proceedings, No. 200, dated 5th May 1900. Personally, I am extremely sceptical as to the information, if gathered, ever being put to any practical use.

Board's un-official reply No. 84, dated 20th March 1908.

The Director of Land Records, a copy of whose un-official reply is submitted herewith, points out the difficulties in the way of compiling the information required by the Chief Engineer and the practical inutility of such information even if compiled. His arguments are based on the assumption that every piece of land irrigated in a month, whether for the first time or a second, third or fourth time, should be brought to account in each month in which irrigation is carried on, so that the same extent will be repeated every month as long as its irrigation continues. If it were so, the Director would be right. The Board presumes, however,
A | that what the Chief Engineer wants is the extent of land newly brought under irrigation every month together with a specification of the duration of the crops grown on the land. This information could be furnished without difficulty, but even for this purpose, a new form of village account would be necessary in which the extents irrigated from the sources, for which statistics are required by the Public Works Department, would have to be entered month by month together with information as to the duration of the crops, and the present cultivation account would not be suitable to this end.

2. The object of the Public Works Department appears to be that, with a return such as the one above referred to showing the actual number of acres irrigated in a month, they should be able to calculate as accurately as possible the number of acres irrigated by each cubic foot of water flowing per second. The Board, however, doubts the possibility of arriving at any satisfactory result without definite data showing the duty of water for each kind of crop and the duty differs considerably not only according to the crop but also according to the nature of the soil and the conditions of rainfall. Unless the quantity of water required in each of these varying circumstances has been ascertained beforehand by carefully conducted experiments, statistics showing the quantity registered at the head cannot be compared in Public Works Department statement I-E with the quantity actually necessary for each crop; nor can the need for such experiments be held to be superseded by the proposed new village account. The Board thinks that experiments to this end over limited areas and in selected localities should be conducted by the Public Works Department on the lines adopted at the Hagari farm and should be reduced to the form of definite data and that until this is done the proposed return would be of little use.

J. Twigg.

To Under Secretary— Revenue Department.

The information required for column 3 of the proposed Public Works Department form on page 2 *supra* "area under irrigation" in each month can be furnished by Tahsildars to Executive Engineers without much difficulty in Government villages. The karnam can compile it from his cultivation note-book, and the difficulty will arise only in those zamindari villages in which the note-book is not kept. The infmation will be useful to Public Works Department for all approximate calculations.

Page 15 of G.O., No. 72 W., dated 10th January 1907.

2. The information required for column 9 of the Public Works Department form cannot be conveniently supplied.

S.S.
28-3-08.

To Secretary—

What the Public Works Department want is information which will enable them to ascertain the exact amount of water required by every acre of land. In order to ascertain this they ask us to supply them with a statement showing lands actually under cultivation during each month; such lands to include—

(1) Lands actually transplanted.
(2) Lands used for seed-beds.
(3) Lands watered for ploughing.

They further ask us to provide them with information as to how much of this is first, second and double crop. They have sent us a form in which two columns are provided for these classes of information. Column 3 is to show the *area under irrigation* each month; column 9 the total area irrigated with particulars of the length of time the crop was on the ground.

2. The Board and the Director of Land Records to whom the form was referred for remarks disagree as to the information required in column 3. The Board thinks that it is the new cultivation each month which should be shown in column 3, the Director that it is the total cultivation during the month. The Director's view is, I submit, the correct one. The Board's interpretation would not enable the duty to be calculated.

Page 4 supra.

3. There is as pointed out by the Director and the Board at present no form in use which gives the area under irrigation each month nor is there one which shows how long any particular part is under irrigation each year. Approximate information could however be obtained from the karnam's inspection note-book prescribed in the manual of village accounts embodied in G.O., No. 72, Revenue, dated 10th January 1907. The note-book has columns which show—

(1) The area of the field (column 3).
(2) Extent cultivated (do. 7).
(3) The month in which cultivated (column 4).
(4) The month in which harvested (do. 8).
(5) Name of crop (column 5).
(6) Source of irrigation (column 6).

It is therefore possible to ascertain by separate posting the area under wet crop in any particular month and also from columns 4 and 8 the length of time the crop was on the ground. The source is also given in the note-book. But as pointed out by the Director the scriptory work involved would be tremendous and further when accomplished would only give the area under *wet crop* which in any particular month does not of necessity take water. To ascertain whether a field was actually irrigated or not during the month would require field-to-field inspection. Further the karnam does not include fields in his note-book until they are actually cultivated, *i.e.*, sown. The Public Works Department ask that land watered for ploughing should be included. They also ask that land under withered crops should be excluded. There is less difficulty about this as the area of lands on which remission is granted could be subtracted from the total.

Paragraph 3 of their note at page 3 *supra*.

4. The addition of any more accounts to the large number with which the karnam has to deal is, I submit, much to be deprecated. The Board makes a sound point when it observes that the duty must vary according to the crop and also according to the nature of the soil and the conditions of rainfall. An additional factor is the energy and knowledge of the ryot. I submit that Public Works Department may be told that we cannot accept the form.

F. Noyce.
2-4-08.

Better put the notes in print and resubmit.

A. G. Cardew.
3-4-08.

To Under Secretary—

The notes are submitted in print as directed.

M.G.
10-4-08.

S.S.
11-4-08.

To Secretary—

F.N.
11-4-08.

This file has not been submitted to the Honourable Member in charge of Revenue, because there seems to be some room for doubt what information is needed in column 3 of the form at page 2. The file may therefore first go back to Public Works Department (Irrigation) for further consideration. It will be seen that there would be very great difficulty in accepting the revised form proposed.

A.G.C.
21-4-08.

PUBLIC WORKS DEPARTMENT (IRRIGATION BRANCH).

To Secretary—

What is required in column 3 on page 2 of these notes is the area to which water is being supplied each month.

The need for this knowledge is extremely great, take for instance the Periyár—

Here we have a large quantity of water available but can only supply it at a relatively slow rate and we have no really trustworthy information as to what each cusec is doing in any month and all proposals for extending the area by distributing the cultivation more evenly throughout the year are based upon assumptions and suppositions.

The same thing occurs with all calculations of the water to be let out of the Cauvery reservoir for old irrigation and second crop, we get duties varying from 6 acres to the cusecs in June to 240 in November.

We only know (and that very doubtful) what the total area cultivated is month by month and we have no information as to how much of this area has been reaped and is out of cultivation for the time being.

The information we are able to put in our administration reports is most meagre and untrustworthy and this is probably one of the main causes of the desire of the Government of India that the Public Works Department should assess the irrigation revenue.

We have recently done all that is possible to reduce the work of the village officers in preparing returns of irrigation revenue, more especially by consenting to the abolition of the "Incidence Table."

This refers evidently to the revision of (village) irrigation accounts referred in paragraph 1 (vii) of G.O., No. 72, dated 10th January 1907. The subject has not yet come to Revenue yet.

S.S.
23-5-08.

We are handicapped through the revenue accounts being for the fasli and the irrigation accounts for the official year and further because we cannot divide our crops into hard and fast "rabi" and "kariff", but if the Board are shown the irrigation statistics prepared in the Punjab where the area under every large distributary is returned separately, it will be seen how modest our demand are compared with what they might be.

T.W.S.S.
12-5-08.

To begin with I must deprecate the "non possumus" attitude taken by the Revenue Board on this question. With a view to improve our systems of distribution of water and especially to minimise waste of water the Irrigation department are making special arrangements for gauging canals and distributaries with a view to ascertaining the "duty" of water on which depends the areas to be ultimately adopted not only under existing irrigation systems but also under future projects.

The question has, I may point out, reached an acute stage in the Gódávari and Kistna Deltas where the area irrigated has been steadily increasing for years past and has now rendered necessary immediate steps not only for the purpose of providing for future extensions but for the satisfactory irrigation of the present areas.

The present system of water distribution in the Madras Presidency has served its purpose well enough in the past so long as the supply of water has been sufficient to make economical distribution of minor importance, but this cannot be allowed to go on indefinitely especially in the larger systems where extensions are still taking place as in the deltas mentioned above and in the Periyár Project areas and elsewhere.

There is therefore urgent need in the Irrigation department for correct data as to the duties now being obtained from our water and it is useless our making elaborate observations of discharges unless we have reliable figures of the areis irrigated with which to compare them.

As matters stand at present we are dependent upon the Revenue Department to supply us with the latter information and I have no doubt that we shall be able to come to some arrangement.

Certain information we must have and even if it means extra establishment it will have to be provided in the Public Works Department, if not in Revenue.

I understand that the information asked for for column (3) can be given, *i.e.*, the total area under irrigation in each month, but that it will involve much scriptory work. As a general rule field to field inspection to ascertain if any particular field took water during the month would not be necessary as it may be taken for granted that no land under a crop requiring irrigation at all would go without water for a whole month. It is more important that lands being watered for ploughing should be included as such lands take more water then than at any other time, but as in most cases lands ploughed in any month would also be transplanted in the same month, not much additional labour would be involved in entering those ploughed though not transplanted. As far as I can see therefore the information for column 3 is available from the karnam's note-book and only requires abstracting.

This is already partly done in order to fill up village account No. 1 and the extra information required would not apparently involve very much labour, but as to this Revenue will be the best judge. As regards column 9 as the note-book already has to contain the name of the crop, could not the karnam without much difficulty enter at the same time against "Paddy" for instance whether it is a 3 months, 4 months, 5 months or 6 month's crop?

It is also pointed out that, under all our irrigation systems at present the great bulk of crop is "Paddy" of different kinds at any rate as regards first crop.

Will Revenue now kindly re-consider the question and see how they can best help us to obtain the statistics which we want and which it may be taken for granted we must obtain somehow or other during the coming irrigation season.

C. A. Smith.
15-5-08.

Revenue Department.

To Under Secretary—

Submitted for orders.

2. Reference is solicited to the Under Secretary's note, dated 2nd April 1908, at page 5 *supra* in which the question as to how fa it is possible to furnish the required information from the karnam's inspection note-brok is discussed at length. It will

be observed that it was considered therein that to furnish the information asked for would involve much scriptory work, apart from the fact that the area watered for ploughing would not be known.

3. As regards the scriptory work the Public Works Department say that even if it means extra establishment, it will have to be provided in the Public Works Department, if not in Revenue.

4. As regards the area watered for ploughing, the karnam may, it is submitted, be instructed to note, in the course of his inspection, in the column of remarks against the fields ploughed with the aid of water from an irrigation source, the name of the source from which water was taken and the extent so ploughed. This the karnam used to do in adangals (Village Account No. 2) prior to the introduction of his inspection note-book and it will, it appears, be not a difficult task for the village karnam to do in his note-book. The same course may also, it is submitted, be adopted for seed beds watered from an irrigation source.

5. As the Public Works Department desire that the above information is required for their purposes, it appears that Revenue should furnish it. The question then for consideration is whether any extra establishment would be required for the purpose. It seems unnecessary to discuss this point at present; the file may, it is submitted, be sent unofficially to the Board of Revenue for remarks as to (1) how the instructions issued in G.O., No. 72, Revenue, dated 10th January 1907, for the maintenance of the karnam's inspection note-book may be revised with a view to furnishing the statistics required by the Public Works Department and (2) whether any establishment will be required for the purpose.

M.O.
21–5–08.

Statistics showing areas irrigated by each distributory *in a year* are now available. For help in ascertaining the duties obtained by water under the larger irrigation systems the Public Works Department want the Revenue Department to furnish them with statistics of the areas under irrigation in *each month* of a year. It would not only require large special establishments for field-to-field special inspection but it would also be impracticable to compile strictly accurate statistics. But the Public Works Department (Irrigation) state that field-to-filed inspection to ascertain if any particular field took water during the month would not be necessary as it may be taken for granted that no land under a crop requiring irrigation at all would go without water for a whole month. There are several dry crops which require only an occasional flooding when rains fail. A wet paddy crop may (in exceptional cases) require no artificial irrigation for a whole month if there are very heavy rains in the month. The number of floodings will vary with the crop, the rainfall and other circumstances. These and other difficulties prove that it would be impracticable to obtain strictly accurate particulars of irrigation for the purpose of working out duties of water on a large scale. But if the aim is only to get roughly approximate statistics, it is submitted the Revenue Department may undertake to supply them with a small addition to the karnam's work which may take a few hours in a small village and one or two days in big villages in a year in the manner described below.

2. As the Public Works Department (Irrigation) require the information for the purposes of an annual statement, no statistics need be despatched to them each month but only once a year and the necessary compilation can be done by the karnam along with other village irrigation returns which the Tahsildar sends direct to the Board's office where the karnam's irrigation accounts are abstracted and published. If the Board requires any additional establishment for its office for this particular return it will apply in due course.

3. As to the manner in which the karnam is to work out the figures please see page 10 below, on which is given a statement showing sample entries in columns 1, 4, 6, 7, 8 and 16 of the karnam's inspection note-book. As the note-book (columns 4 and 8) shows in what month each irrigated field is cultivated and harvested, the extents of irrigated crops that stood on the ground in each month of the year can be posted into a posting statement, a sample of which is given on page 10 below. An abstract of this posting statement for each village irrigated by the large irrigation systems referred to by the Public Works Department will be sent up to the Board's office and the Board will furnish the Public Works Department (Irrigation) with the necessary information to be embodied in column 3 of the proposed annual statement I.E. on page 2 of this notes file above. As already observed these figures will be useful for working out duties of water only approximately.

Page 15 of G.O., No. 72, dated 10th January 1907.

4. As regards column 9 of the proposed Public Works Department (Irrigation form I.E., it is submitted that separate details of extents under 3 months, 4 months, 5 months, crops, etc., would only be necessary if column 3 of the form had showed only the extent that is actually sown or cultivated in each month. But as it is proposed above to show in the column 3, the extents of irrigated crops that actually stood on the ground in each month whether such crops were sown in the month or in previous months, no further detailed information would be necessary in column 9 for the purpose of calculating duties of water. It will be seen that even the particulars of extents under 3 months, 4 months, etc., crops will have to be compiled not as suggested in Public Works Department (Irrigation) by the karnam noting at the time of the inspection (as a matter of guess work) whether each crop is a 3 months, 4 months, etc., crop, but by a reference to columns 4 and 8 of the karnam's inspection note-book; but the karnam will have to prepare another posting statement and another abstract together with these particulars. But it is believed that the Public Works Department (Irrigation) will agree that these particulars for column 9 will be unnecessary for working out the duties of water if column 3 shows the particulars as indicated above.

5. If the Public Works Department (Irrigation) agree with the above, it is submitted that the Board can be asked to embody the necessary instructions in the revised instructions for the preparation of village irrigation returns, which, it is understood, are now being framed by the Board in consultation with the Chief Engineer.

Board's Proceedings, No. 200 R.S., dated 5th May 1900.

S.S.
25-5-08.

Statement showing sample entries that may appear in columns 1, 4, 6, 7, 8 and 10 of th karnam's inspection note-book (page 15 of G.O., No. 72, dated 10th January 1907).

Consecutive survey number and sub-division.	Month in which cultivated.	Actual source of irrigation.	Extent cultivated.	Month in which harvested.	Remarks (Here enter. . . (4) Particulars of irrigation in a subsequent month of fields previously cultivated without irrigation).
Col. 1 of the karnams' note-book.	Column 4.	Column 6.	Column 7.	Column 8.	Column 10.
			ACS.		
1	July	Canal	2·40	December.	
2	Do.	Do.	3·50	November.	
3	September	....	4·05	December.	
4	August	Canal	1·80	January.	
5	September	....	2·20	Do.	Irrigated in December (canal) 1·53.
6	October	....	3·40	February.	
7	July	Canal	2·25	October.	
8	September	Do.	4·32	December.	
9	November	....	5·26	March.	
10	July	Canal	4·23	December.	
11	August	Do.	3·14	Do.	
12	Do.	Do.	2·16	January.	
13	September	Do.	1·85	February.	
14	October	....	3·22	March.	
15	Do.	....	1·64	Do.	
16	September	Canal	3·14	February.	
17	July	Do.	1·55	December.	
18	Do.	Do.	2·47	November.	
19	August	Do.	2·23	Do.	
20	Do.	Do.	1·88	January.	
21	September	....	4·32	Do.	
22	October	....	3·58	March.	
23	November	....	2·84	February.	
24	July	Canal	2·45	December.	
25	August	Do.	4·25	January.	

Posting statement showing the extents on which irrigated crops stood on the ground in each month of the year . . . . compiled from the karnam's inspection note-book.

—	July.	August.	September.	October.	November.	December.	January.	February.
	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.
1	2·40	2·40	2·40	2·40	2·40	2·40	..	..
2	3·50	3·50	3·50	3·50	3·50	..	..	..
4	..	1·80	1·80	1·80	1·80	1·80	1·80	..
5	..	..	..	..	..	1·53	1·53	..
7	2·25	2·25	2·25	2·25	..	..	..	..
8	..	..	4·32	4·32	4·32	4·32	..	..
10	4·23	4·23	4·23	4·23	4·23	4·23	..	..
11	..	3·14	3·14	3·14	3·14	3·14	..	..
12	..	2·16	2·16	2·16	2·16	2·16	2·16	..
13	..	..	1·85	1·85	1·85	1·85	1·85	1·85
16	..	..	3·14	3·14	3·14	3·14	3·14	3·14
17	1·55	1·55	1·55	1·55	1·55	1·55	..	..
18	2·47	2·47	2·47	2·47	2·47	..	..	..
19	..	2·23	2·23	2·23	2·23	..	..	..
20	..	1·88	1·88	1·88	1·88	1·88	1·88	..
24	2·45	2·45	2·45	2·45	2·45	2·45	..	..
25	..	4·25	4·25	4·25	4·25	4·25	4·25	..
Total ..	18·85	34·31	48·42	48·42	41·17	34·70	16·41	4·99

To Secretary—

Mr. Smith points out the importance of the information now asked for to the Public Works Department which he considers so essential that if extra establishment has to be provided Public Works Department are prepared to pay for it. Public Works Department have now made clear exactly what they want and something can be done, I submit, to assist them in the matter.

2. It is now clear that what is wanted is the total cultivation during the month. The forms prepared by the Deputy Registrar on page 10 to of the notes show how this can be abstracted from the karnam's note-book. Mr. Smith points out that the presumption is that a wet crop takes water every month during which it is standing on the ground and that field to field inspection would, not therefore be necessary. If this is the case, the abstract on page 10 would except as regards lands ploughed but not cultivated during the month to which reference is made below, be sufficiently accurate for Public Works Department purposes. As regards the second abstract referred to in paragraph 4 of the Deputy Registrar's note, Mr. Smith, with whom I have discussed the matter, says that it is not of importance and that, provided we can give Public Works Department the total cultivation of each month, the length of time the crop is on the ground does not matter.

3. One further point arises, the karnam's note-book (see page 15 of G.O., No. 72, Revenue, dated 10th January 1907) gives the month in which the crop was cultivated only. Public Works Department point out that it is far more important to them to know when the field was ploughed, as it is between ploughing and transplanting that most water is as a rule used. It frequently happens, however, that the field is ploughed after rain and not with the aid of water from the irrigation source. It would hardly be sufficient, therefore, to change the heading of column 4 from "Month in which cultivated" to "Month in which ploughed." Mr. Smith points out that lands ploughed in any month are usually transplanted in the same month. The best plan appears to be for the karnam to enter in the remarks column the month in which the land was first ploughed with water from the irrigation source, if it differs from the month in which the land was cultivated.

4. Public Works Department (Irrigation) would prefer the abstract monthly. Its preparation must involve additional scriptory work on the part of the karnam, the amount of which can only be discovered by experience. It may probably mean the appointment of assistant karnams in some of the bigger wet villages under the large irrigation systems. It is, however, possible that the additional labour in this direction may be saved in other ways. Mr. Smith refers to the abolition of the incidence table, evidently with reference to the simplification of irrigation accounts referred to in paragraph 1 (vii) of G.O., No. 72, Revenue, dated 10th January 1907.

5. The Board may perhaps be asked for further remarks in the light of the additional information now furnished by Public Works Department (Irrigation).

F.N.
29-5-08.

Please have the notes put in type up to date and link this file with the Board's Proceedings which has been received regarding the revision of No. 8 village Account and its enclosures. Please expedite resubmission of the two linked files.

A.G.C.
2-6-08.

To Under Secretary—

The notes are submitted with the file relating to the revision of village account No. 8.

M.G.
24-6-08.

The Secretary enquired (orally) how the proposed statement showing the extent of irrigation in each month of a year would be more useful in regulating the supply of water than the existing statements. The existing statements show only the total extent under irrigation *in a year* and not the irrigation *in each month*. For example, taking the tables on page above, the first table would show that the total extent irrigated in the year was acres 44·91. But the second table would show that the extent under irrigation in each month was as follows :—

	ACS.		ACS.
July	18·85	November	41·17
August	34·11	December	34·50
September	43·42	January	16·41
October	43·42	February	4·89

A knowledge of the latter details will enable the Public Works Department to regulate their water-supply so as to be sufficient for about acres 18·85 in July, for acres 34·11 in August, and so on. This information is not available in the existing returns. It is for consideration whether the new return required by the Public Works Department (Irrigation) should be ordered to be compiled in the manner suggested in the note, dated 25th May 1908, on pages and above and tried as an experiment in respect of a few selected irrigation works.

F.N.
13–8–08.

S.A.
4–7–08.

Secretary,—

F.N.
13–8–08.

I think that we had better now do what the Under Secretary suggested on 29th May. Ask the Board for further remarks in the light of the additional information now furnished by the Public Works Department (Irrigation). The file may go u.o. to the Board for its opinion.

A.G.C.
9–9–08.

To the Board of Revenue (Settlement) u.o.

OFFICE OF THE BOARD OF REVENUE
(REVENUE SETTLEMENT).

Referred to the Director of Land Records u.o. for remarks.

A.D.S.
16–9–08.

L. D. SWAMIKANNU.
15–9–08.

I would invite attention to the stipulation made for accuracy in the notes of Messrs. Smyth and Clerk on pages and , "The actual usefulness of this will "depend on the accuracy of the figures supplied" and "assuming them to be correct "the return will be of the greatest value"; "it is hoped that all information furnished "(*sic*) will be unimpeachable."

But the proposal now is to compile a statement from the karnam's note-book (enlarged by the addition of particulars of month of ploughing where that differs from month of cultivation, *i.e.*, sowing or transplantation) the underlying assumptions being that a crop sown or transplanted with irrigation or once irrigated in any month may be taken as irrigated every month from the time of ploughing to the time of harvest. If this assumption does not affect the accuracy of the returns for the purpose intended, there is nothing more to be said on that head.

2. But there is another assumption which possibly does not affect the accuracy of the returns for the purpose intended but which nevertheless should be understood before the return is finally prescribed, and that is the assumption that the months of ploughing, sowing or transplantation and of harvest entered in the karnam's note-book are the result of actual observation by that worthy man in the field. They are not. We have by degrees so piled up work on the karnam, particularly in wet villages, that he finds the writing done of what he is supposed to do as much as he really can do conveniently and he rarely does more. I do not suppose any Revenue officer who has taken the trouble to study karnams and their ways and accounts could delude himself into believing that a karnam careers round the fields to note down when they are ploughed, when transplanted or sown and when harvested. He writes all this down in his house from his general knowledge of the season and what is going on in the village. What he goes to see ordinarily (if he does not send the vetti) is second crop wet and irrigated dry at the appropriate season. It may be noticed that excessive scriptory work is always stated to be the karnam's burden. People don't think of mentioning the far greater expenditure of time and labour that the actual ascertainment of the particular to be written would involve for the simple reason that the karnam does not incur it.

Exactly.

L.M.W.
19-12-08.

3. I do not mean to imply that the karnam's returns are therefore valueless. They are intended for statistical purposes and for such purposes are quite accurate enough, probably unnecessarily accurate, but if I have understood the Public Works Department notes aright; they want to know actual facts which will give information in themselves and not approximations that have value only when compared with similar approximation made for a series of years.

4. If accurate information is really wanted, I submit we should go the whole way and appoint a special staff to collect it. To begin with a few important distributaries might be selected and a special karnam appointed for each village under the distributary to compile a statement of the fields (areas) under irrigation each month based on inspection of all the survey numbers. A certain number of Inspectors will be necessary to see that the work is done and to compile the final returns. The whole staff might work under the Executive Engineer. It is only the fact of irrigation in relation to the survey numbers that will have to be observed. All the records necessary to work on will be a copy of the village map and an area list of the survey numbers and survey sub-divisions (where shown in the village map).

5. If the task is imposed on the karnams we shall bear no objections and shall receive the returns alright, but we should be deceiving ourselves if we supposed they were the result of actual inspection or accurately represented facts.

L.M.W.
19-12-08.

N. E. MARJORIBANKS.
16-9-08.

In my former note it was presumed that the date of cultivation with a knowledge of the normal duration of the several crops cultivated would give the necessary information. It will no doubt be better as now proposed to take the actual duration of the crops from cultivation to harvest: the important point is that a field-to-field inspection monthly is not required.

There would be no great difficulty in sending in every month the total area under irrigation compiled from the inspection note-book as suggested, and it is not likely that any special establishment would be required, *e g.*—

	July.	ACRES.
Cultivated	... ...	100
Harvested	... ...	*Nil.*
	Balance ...	100
	August.	
Balance ...	... ...	100
Cultivated	... ...	300
Harvested	... ...	*Nil.*
	Balance ...	400

It is presumed that the information is required only for wet crops.

The Public Works Department (Irrigation) wish to know the date of ploughing. It would be possible to insert columns in the karnams' inspection note-books to show the month in which the fields were ploughed as well as the month in which they were "cultivated", but taking the karnam for what he is it would, I think, give better results if he is left to report only one date of cultivation as at present, and if an allowance is made of say half a month for the preparatory irrigation.

J. T[WIGG].
8–10–08.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

Under Secretary—

It is submitted Revenue may now decide to supply Public Works Department (Irrigation) with statistics of "the extents on which irrigated crops stood in each month of the fasli."

2. Revenue may agree with the Board that in compiling the statistics the month of "cultivation" should be taken into account and that an allowance may be made in Public Works Department (Irrigation) of half a month for ploughing and other preparatory irrigation remembering that we can undertake to supply only approximate and not strictly accurate statistics.

3. The Board's presumption that information is required only for wet crops is not correct. For purposes of calculating the duty of water, the extents of dry crops irrigated will also be wanted by the Public Works Department (Irrigation). As will be seen from the sample entries in the statements on page 10 of the notes above it will not be difficult to take out these extents from the karnam's cultivation note-book. Revenue may therefore decide that the statistics should include both wet and dry crops.

F.N.
17–10–08.

4. In order to minimise the additional work thrown on the karnams, the Taluk office in compiling the statistics it is submitted that it should be decided that the karnam should prepare the statement showing "the extents on which irrigated crop stood in each month of the fasli." Once a year along with the other irrigation accounts (Village Manual Forms Nos. 8-A and 8-B). All these irrigation accounts prepared by the karnams are submitted direct to the Board's office by the Tahsildar. Abstracts of the accounts are prepared in the Board's office by special establishments and furnished to Public Works Department (Irrigation). The same course will be followed in respect of the new statement also. The statement will show the extents irrigated in each month of the year but will be compiled and furnished to Public

A | Works Department (Irrigation) only once a year and not monthly. The Public Works Department (Irrigation) can have no serious objection to this course because they want the information for the purposes of an *annual* return

I.E. to be furnished to India. On the other hand to furnish Public Works Department (Irrigation) with the statistics at the end of each month instead

of at the end of the year, the karnam will have to note the statistics in his cultivation account (Village Manual Form No. 1), the Revenue Inspector will have to make an abstract for his firka and the Tahsildar for his taluk. Tahsildar will have to send up the abstract to the Executive Engineer in each month. The submission of a statement monthly will therefore involve additional work and not much corresponding advantage to Public Works Department (Irrigation). It is therefore submitted that it may be decided to furnish an annual statement only to Public Works Department (Irrigation).

5. Before issuing final orders the file may be sent to Public Works Department (Irrigation) for remarks.

S.S.
17–10–08.

Will Public Works Department (Irrigation) kindly state how far the procedure outlined in the office-note would meet their wishes?

F.N.
17–10–08.

To the Public Works Department (Irrigation) u.o.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

Under Secretary,—

The Revenue Department agree to furnish this department with a statement *annually* showing the extent irrigated in each month whether wet or dry and state that to furnish a similar statement *every month* involves much additional work as the karnams will have to note the statistics in their cultivation statement, the Revenue Inspector will have to make an abstract for his firka and the Tahsildar for his taluk. The above information is intended for column 3 of the statement printed on page 2 of the notes.

2. With regard to column 9 of the statement on page 2, a reference is invited to paragraph 4 on page 9 of the notes and the concluding portion of paragraph 2 of Under Secretary's (Revenue) note (page 11 of notes).

For orders.

N.L.R.
21–11–08.

G.E.B.
21–11–08.

The proposals may be accepted, for the purposes of calculating duties an annual return is all that is required.

2. The monthly return might be of use to the Executive Engineers but it is doubtful if it could be compiled quickly enough, a return a fortnight old is ancient history so far as *working* an irrigation system is concerned.

3. It would be somewhat better if the karnam could enter the date of commencement of cultivation instead of having to adjust the figures afterwards, as the return will be by months it will be very easy to make mistakes in adjusting them and small complications will arise.

After all it is quite immaterial as regards *wet* lands, from what source, rain or canal, the water actually comes, our records will show this sufficiently well and as one of the most important points on which we need information is the extent by which rainfall allows a reduction of artificial supplies it is correct to include wet lands prepared for cultivation by the aid of rain. If however the Revenue Department's proposals are accepted the return must show the operations of each month as given by the Hon'ble Mr. Twigg on page 17 of these notes. Even then it is feared there will be some difficulty in adjusting the figures. For example a canal is opened in June and the figures are—

C.A.S.
24–11–08.

Month.	Balance.	Cultivated.	Harvested.	Balance.
	ACS.	ACS.	ACS.	ACS.
June	0	10,000	0	10,000
July	10,000	30,000	0	40,000
August	40,000	60,000	0	100,000

We can't put back the June figure as the canal was closed in May and it is assumed that the 10,000 acres were planted out with seedlings grown under wells. We have therefore assuming that ½ a month was taken for ploughing, the following revised figures :—

Month.	Balance.	Cultivated.	Harvested.	Balance.
	ACS.	ACS.	ACS.	ACS.
June	0	25,000	0	25,000
July	25,000	45,000	0	70,000
August	70,000	30,000	0	100,000

4. Apart from the liability to errors it is objectionable to have the Board's return differing from that of the Public Works Department. One person will use one and one the other and very varying results will be obtained. We already suffer from this as witness the following—G.O., No. 545 I., dated 17th December 1907, submitting the irrigation accounts for fasli 1316, Gódávari system :—

	Acres.
Appendices I and A—	
(1) First crop 712,154 acres, second crop 160,695 acres ...	= 872,849
(2) Appendix IV, Total columns 6 and 7	= 862,745
(3) ,, ,, 8, 12 and 16	= 847,710

5. The totals do not represent exactly the same thing, but (2) and (3) should apparently agree ; the difficulty is which of them all to select for purposes of estimating duty, revenue per acre, etc. We actually take appendix I, but Mr. Cardew in a note a little while back took one of the others. The new return will, it is trusted, agree with appendix I.

T.W.S.S.
23–11–08.

The proposal with which this file was started is to revise Form I E, but I think that this point has been rather overlooked in the more recent notes and the question has resolved itself more particularly into one of obtaining more accurate and detailed figures of cultivation for the purpose of obtaining correct duty figures.

2. Form I-E is one prescribed by the Government of India and cannot be revised without their permission and I do not think that the result of the present correspondence will justify any proposal to revise the form for submission to India at present.

3. I am afraid therefore that we must ask the Revenue Board to continue to supply us with Form I-E in its present form and in addition to give us the monthly details of cultivation in the revised form.

4. If possible these details should be given for the current irrigation season and when we get them we can decide whether they are really more useful and give more accurate duty figures than the irrigation accounts which have been supplied in the past.

5. From Mr. Marjoribanks' note on pages 13–16 I think this is open to considerable doubt and that it will probably be found desirable to employ a special establishment as suggested by him in paragraph 4, page 15. I am however by no means sure if the proposal to employ this special Revenue staff under the Executive Engineer will work satisfactorily, but on the other hand difficulties may arise if the staff is entirely Public Works Department staff.

6. I propose however to consult the Superintending Engineers on this point and will inform Revenue in due course of the result.

7. Meantime if Revenue have no objection will they pass the necessary Revenue order to the Board to supply the additional information in the form given on page 17 notes file. The form is not required to be sent in monthly but only annually. It will certainly be preferable if the crop can be entered as cultivated in the month in which it is finally ploughed before transplanation.

8. I say finally ploughed because in some cases the fields are ploughed soon after harvest for the purpose of aerating the soil, but this of course has nothing to do with the question of water-supply or duty.

9. It is immaterial for our purpose whether the final ploughing is effected with rain or artificial irrigation as we can, from our discharge figures and the rainfall statements make out the total depth supplied on the field in any month. This is really the most important result which we expect to obtain as from it the effect of rainfall upon the duty of canal water can be ascertained thus enabling the latter to be more accurately estimated for any given locality.

C.A.S.
26-11-08.

To the Revenue Department u.o.

REVENUE DEPARTMENT.

Secretary—

The Public Works Department (Irrigation) state that no sufficient case is made out to move India to revise the form of I-E statement and desire its continuance. They also request that in addition to the I-E statement the Board may be asked to furnish them with an annual statement showing the monthly details of cultivation in the form suggested by the Hon'ble Mr. Twigg at page 17 of the notes file. It is submitted that Revenue may agree to issue orders to the Board to submit to Public Works Department (Irrigation) the additional information required by them.

2. The Public Works Department (Irrigation) also suggest that it would be preferable if the crop can be entered as cultivated in the month in which it is finally ploughed before transplanation. This proposal involves additional work to the karnam as he is to go round the fields once before the crop is actually sown. It may, it is submitted, be assumed that lands will finally be ploughed within 10 or 15 days before they are transplanted. As stated in the office-note dated 17th October 1908 it would be better to take the month of cultivation into account in compiling the statistics, an allowance being made in Public Works Department (Irrigation) of half a month for ploughing and other preparatory irrigation.

B.V.R.
3-12-08.

As the Public Works Department (Irrigation) are consulting the Superintending Engineers regarding the employment of a special staff for the collection of statistics necessary to work out duties of water, it is submitted that it would be enough for the present to ask the Board to furnish a "statement showing the extents on which irrigated crops stood in each month of the fasli" for the current year only. Whether the statement should be continued afterwards may be considered if the Public Works Department (Irrigation) find the current year's statement really useful and if no special staff is employed to collect the statistics. The statement will be forwarded by the Board to the Public Works Department (Irrigation) along with the other irrigation accounts which it will send in October 1909.

2. Following Mr. Smyth's note dated 14th November 1907 it is proposed to prescribe the statement only for the eight* systems now included in "Class I. Major productive and protective works" and the following six among those included in Class II. Minor works for which capital and revenue accounts are kept":—

* G.O., No. 543 I., dated 17th December 1907.

(1) Cumbum tank.
(2) Thadepalli channel.
(3) Arakankottai channel.
(4) Kalingarayan channel.
(5) Chembrambakkam tank.
(6) Mradas water-supply and irrigation extensions.

3. A draft Government order is put up. It may go to Public Works Department (Irrigation) for acceptance before issue.

S.S.
4-12-08.

Secretary—

It seems sufficient, I submit, if the form is prescribed for the present for the current fasli only.

F.N.
18-12-08.

From my own personal knowledge and experience gained as Deputy Director of Land Records I can fully endorse the remarks made by Mr. Marjori banks at pages 15-16 of this file.

The draft Government Order may be expected to produce returns in the form prescribed based on posting statements similar to that printed at page 10. That is to say for the month of August the returns would show—

		ACS.
Crop on ground at beginning of month	... ...	18·85
Extent of irrigated crop cultivated in the month	... ...	15·16

but there will be nothing to show how long the crop cultivated in the month had been on the ground. It may have been July crop cultivated at the end of the month but not brought to account till August or it may have been crop cultivated at the very end of August the duty of water supplied in the month of August may therefore have been anything between 18·85 acres or 34·11 acres (or during the last 5 or 6 days of the month after the karnam has sent in his return for the month) as many acres more as the ryot may have irrigated out of the additional 8 acres and odd brought to account in September.

Returns of this kind would, I imagine, be utterly useless for the purposes for which Public Works Department want them.

The best way for Public Works Department to get the information they want would be to apply for the service of an intelligent Revenue Inspector to be put on special duty for six months on a salary of 50, say, in the villages comprised in the Chembrambakam system (or any other system for which the statistics are required). Some Public Works Department officer should go round the field with him at first and show exactly what the record is that is wanted. The Revenue Inspector would then have to visit all the villages concerned every month, provide himself with copies of the karnam's cultivation statements and make the necessary correction therein as to the areas actually under irrigation each month *on the date of his visit*. The Public Works Department gauges would, I presume, show the actual quantity of water supplied on the corresponding dates.

How can he unless he visits each field and questions the ryot?

M.H.

From these data it would be possible I should think to compile fairly approximate estimates of the duty of the water supplied.

L.M.W.
23-12-08.

To the Public Works Department (Irrigation) u.o.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

Joint Secretary—

With reference to paragraph 7 of Chief Engineer for Irrigation's note, dated 25th November 1908, the Revenue Department agree to furnish this department with a statement showing the extent on which irrigated crops stood in each month of the current year only and accordingly propose to issue an order which is sent to this department for acceptance. Before accepting the order, a reference is requested to the Revenue Secretary's note above.

N.L.R.
7-1-09.

G.E.B.
7-1-09.

In the face of Mr Wynch's note it is useless to issue the draft order to the Board and I will accept the recommendation to appoint a special Revenue Inspector.

I am not quite sure as to the best system to select for the experiment and will consult Superintending Engineer, V Circle, personally before going any further.

C.A.S.
8-1-09.

I think the best place for the experiment will be the Kistna Western Division where the Executive Engineer, Mr. Ramalingam Aiyar, has already been collecting some information in the same direction.

The best time to appoint the Revenue Inspector will be in May so as to be ready to collect information during next irrigation season.

Will Revenue kindly take the necessary action.

C.A.S.
24-1-09.

To the Revenue Department u.o.

Revenue Department.

Please draft official memorandum to the Board.

L.M.W.
27-1-09.

Under Secretary—

It is for consideration whether the cost of the special establishment should be debited to "8C. Land Revenue—Land Records" as that of the establishment entertained temporarily in the Board's office for the compilation of the annual irrigation returns; or whether it should be debited to "43. Minor Works and Navigation—Public Works Department." If the Revenue Inspector should work under the Tahsildar collecting statistics on the lines laid down by the Executive Engineer the cost will have to be debited to "8C. Land Revenue" under article 1006 of the Civil Account Code, Volume II. But if the Revenue Inspector should work under the Executive Engineer his pay will have to be debited to Public Works Department. In the case of special establishment sanctioned for acquisition of land or collection of revenue particulars for Public Works Department projects the cost * is debited to Public Works Department.

Page 44 of Budget for 1908–1909.

* No. 422 I., dated 10th November 1908.
No. 490 I., dated 12th November 1907.

2. It is also for consideration whether a peon on Rs. 7 should not be allowed for the Revenue Inspector.

3. The draft official memorandum put up may require revision in the light of orders that may be passed on paragraphs 1 and 2 above. It will also have to go to Public Works Department (Irrigation) for acceptance.

S.S.
1-2-09.

Secretary—

The draft is submitted but it should, I think, issue in Public Works Department (Irrigation) and I have altered it accordingly. The Secretary has proposed that the Revenue Inspector should work under that department, a course which will ensure his obtaining the exact statistics required.

F.N.
2-2-09.

Honourable Member

Reference is solicited to my note at page 18 of this file. The Public Works Department want to find out the actual areas irrigated by known quantities of water passed through the irrigation sluices. Our present form of cultivation account gives particulars of areas irrigated in the month to which they relate but these would be quite useless for the purposes required by the Public Works Department. Attempts have been made to prescribe forms adapted to the purposes of the Public Works Department.

Mr. Marjoribanks criticised them on pages 13–16 of the note and his criticisms are sound.

I suggested that the best way would be to confine attention to a small area at first and put an intelligent Revenue Inspector on to the work. Public Works Department accept this proposal and a draft Government Order has been prepared accordingly for issue in Public Works Department.

L.M.W.
3-2-09.

I quite agree that the village statistics compiled from the village accounts would be quite useless, but after reading this long note I am not satisfied that the proposed Revenue Inspector will be able to give any better statistics. I cannot imagine what kind of area he is to deal with, or what kind of statement he is to prepare. What the Public Works Department want is clear enough; they want to know from a

certain sluice exactly how many acres are under irrigation on each day of every month. The Revenue Inspector if he has, say, twenty villages to examine will have to tabulate figures in each village for every day of the month. Surely if he is to get any statistics worth the name, the area he will work over will be very small and the results hardly worth the trouble.

If he depends on the kurnams' cultivation accounts which are notoriously incorrect I do not see how his statements will be worth more than the statements from which they are compiled.

Will the Revenue Secretary kindly bring the paper round some morning and explain the scheme? No instructions are given for the Revenue Inspector. Such should be drafted.

M. H[AMMICK],
5-2-09.

The Secretary spoke to me about the matter but unfortunately I have never had time until now to go though the file again.

I will accept the proposal to appoint the Revenue Inspector as proposed. But I must say I am still very sceptical as to his power to produce any results worth the paper they are written on. This Revenue Inspector unless he has *a very small* area to deal with cannot possibly get any accurate figures. He will not be able to say from the kurnams' returns whether a field was irrigated on the 1st or 21st of any month; and if this is so how is he going to show how many acres were being irrigated from any particular sluice on any one day?

What I take it the Public Works Department want to know is how many acres are being irrigated on each day of the month, whether for transplanted fields or for seed-beds or for soaking the land anterior to ploughing? If this is so how can a kurnam's note book which, even if he does as he is told, he only takes out to the fields at the end of the month, give any information of sufficient accuracy to be useful? What can the Revenue Inspector do to make the returns more accurate?

However the Revenue Inspector may perhaps be able to tell us what changes we should make in our accounts and I have no objection to the experiment being made.

We should get from the Public Works Department a report on the experiment after the six months are over. And the report had better come through the Director of Land Records so that we may see whether any useful result has been attained. I doubt it.

M. H[AMMICK].
14-4-09.

I take it that what the Revenue Inspector will have to do will be to take all the channels and distributaries under some particular sluice, which has a gauge and make lists of all the survey numbers usually irrigated thereby and then fill in from the kurnam's note book, local enquiries and personal inspection the area actually irrigated day by day for six months, commencing with the first waterings given for ploughing the lands. The village accounts as they stand will not of course furnish the requisite information and the Revenue Inspector must get it for himself as best he can, which he ought not to have very much difficulty in doing provided he does not attempt to deal with too large an area. Very possibly the area commanded by one or two main distributaries alone will be found as much as he could deal with accurately.

As to this the Executive Engineer will have to give him personal instructions on the spot.

At the end of six months the Revenue Inspector ought to be able to furnish a report which will enable us to decide how the information required can best be obtained in future, what extra steps would be needed and what forms of accounts would have to be prescribed.

It might perhaps be as well to send the Executive Engineer a memorandum somewhat on the above lines explaining how he can best utilise the Revenue Inspector's services and asking him to consult the Collector freely and invoke his interest in the matter.

The point is that the Executive Engineer, with the help of the Revenue Inspector and the Collector has to find out how best to get the information Public Works Department want. We can't prescribeforms and issue definite instructions from here.

Will Public Works Department (Irrigation) issue some such memorandum as I have suggested. It need not go with the Government Order, I think.

L.M.W.
20-4-09.

To the Public Works Department (Irrigation) u.o.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

Under Secretary—

The draft order prepared by the Revenue Department is in accordance with Chief Engineer for Irrigation's suggestions in his note, dated 24th January 1909. It is proposed to be issued in Public Works Department (Irrigation). If approved it will be issued in manuscript at once as the Special Revenue Inspector is proposed to be entertained in May. A memorandum may then be sent to the Executive Engineer, Kistna Western Division, giving detailed instructions as suggested by the Revenue Secretary in his note, dated 20th April 1909.

M.S.V.
24-4-09.

T.W.S.S.
26-4-09.

The order may issue at once in manuscript as proposed, after which the file should come back to me with the accompanying draft Chief Engineer for Irrigation's note and memorandum typed as soon as possible with half margin.

C.A.S.
28-4-09.

[Issued as G.O., No. 182 I., dated 28th April 1909.]

Public Works Department.

G.O.No. Nº 182-I.d, 25.4.09

P4N.8

With a view to improve the systems of distribution of water and especially to minimise waste of water, the Govt. are making special arrangements in the P.W.D. for gauging canals and distributaries in order to ascertain the "duty" of water, information regarding which is necessary to ~~enable~~ determine the areas which can be irrigated not only under existing irrigation systems but also under future projects ~~to be determined~~.

2. For this purpose statistics are required to show the areas irrigated in each month under wet and dry crops including.

P19 N.8

P5 N.8

(1) Lands actually transplanted.

(2) Lands used for seed beds, and

(3) Lands finally watered for ploughing.

P37 N.8

3. The Government propose to start the experiment of collecting such statistics in the Kistna western Division and are of opinion that the accurac

P35N9

of the statistics can best be secured by placing an intelligent Revenue Inspector on special duty to work under the Executive Engineer of that Division. The pay of the Special Revenue Inspector will be fixed at Rs.50 per mensem and his appointment will for the present be temporary for 6 months from the 1st May next. The Collector of Guntur will be requested to depute a suitable Revenue Inspector for the purpose.

4. The Superintending Engineer II Circle is requested to submit for sanction a proposition statement for the appointment of the Revenue Inspector, who will be allowed a peon on Rs.7 ~~for sanction~~.

6. The E.E. should issue further detailed instructions for st guidance of the Rev. Insp.

B.V.R.
29-1-09

S.S.
31-1-09

26/4/09

3/5/09

To ,, Chief Engineer for Irrigation
The Superintending Engr, II Circle
,, Revenue Department.
,, Board of Rev, (R.S.)
,, Collector, Guntur,

Despd
...4.09

Revenue Department.

NOTES.

<u>Note on Statement I E in the Administration Report</u>
<u>Irrigation Branch.</u> (p. 37 of Irrign. Report put up)

Flag A

B

This one of the 13 statements ordered by the Secretary of State, to be appended to the Irrigation Revenue Reports, vide G.O.No.673-I, dated 3rd August 1885. In G.O. No.279-I, dated 26th March 1886, the Government of India at the instance of the Local Government gave permission to the statement being appended to the annual Administration Report, until a separate revenue report ~~can~~ could be prepared for the Madras Presidency. Reviewing the Revenue Report of Irrigation works in Madras, the Government of India in their letter No.78-I dated 8th May 1890 printed with G.O.No.334-I dated 18th June 1890 remarked that the use of the terms <u>Khariff</u> and <u>Rabi</u> in the statement was misleading and ordered the substitution of the terms <u>first crop</u> and <u>second crop</u> in their places -- respectively. The form accordingly altered was in use from 1889-90 till 1897-98 when an additional column was opened to show the quantity of water supplied per acre during the time the canals were open. Since that date no alterations have been made in it. This statement is quite useless to local Engineer Officers and is very misleading to others who are unacquainted with local conditions and attempt to draw deductions from the figures furnished in it.

D

...port for 1890-91 filed up; report for 1889-90 not ...g available. Also reports for 1884-85 ...85-86, 1896-97 and ...97-98.

2. The following are the principal causes which render the return useless:—

(1) Up to the present time the discharges through the head sluices have been very inaccurately measured. This is due to various causes all dependent on the fact that for many years in most of our systems there has been no special object to be gained by an economical

economical distribution of water and the officers of the Department have generally speaking not had the power to enforce it even if they wished to. In -- consequence of this very little attention has been paid to the correct measurement of water entering our canals or leaving our reservoirs. Now that -- cultivation under our larger systems is reaching its limit the question of economical distribution becomes an important one and steps are being taken - both by the construction of "gauging runs" and by the revision and checking of the calculated discharges to obtain really reliable discharge data. A great improvement in the accuracy of this portion of the return may therefore be expected at an early date.

(2) Division of cultivation into 1st & 2nd crop. This classification is quite unsuited to the requirements of Engineers in this Presidency and the mere substitution of these terms for Kharif and Rabi as mentioned above has done nothing to mend matters. In the first place there is no well-defined division between first and second crop, and in the next, in some cases the definition of these crops given in the foot note of the statement does not agree with that adopted by the Revenue Department. For instance, in the Godavari delta, during the first crop season a large area is - grown without irrigation and after it is reaped, an irrigated crop is grown. This being the first irrigated crop is called the first crop although grown during the second crop season. Similarly in the Cauvery delta system, owing to the different methods of cultivation which exist, it is quite impossible to divide the season into first and second crop periods.

All statistics of this kind must be read with knowledge of local conditions & are useful for the purpose for which the sheet was ...

(3) It is at present impossible to show amount of water utilized and the duties can only be calculated on

on the discharge at the canal head. Steps are being taken to measure as far as possible the water run to waste but it is not likely that very reliable information will ever be obtainable under this head.

3. In order to make the statement more trustworthy and useful, it is suggested that for the purpose of working out "duties" the distinction between 1st and 2nd crop be altogether given up and in its place a monthly cultivation and duty statement be substituted. For this purpose the Revenue Department will have to supply a statement of lands actually under cultivation during each month; the statement should include not only lands actually transplanted but also those used for seed beds and watered for ploughing but the three need not be shown separately i.e. number of acres per cubic foot per second, will then be struck for each month.

This seems to be a mistake for irrigation
22.2.08

The crop period should be taken from date of first letting water into the fields until completion of harvest.

4. The total number of acres of ~~xxxxandxsecondxcrop~~ first 2nd and double crop should be separately reported by the Revenue Department and may be shown in column 9 of the attached specimen form. The main object of ~~xx~~ this return is to show as accurately as circumstances will allow the number of acres irrigated by each foot of water. It will be seen from the foot note to the form now in use that the figures in column 2 to 6 ~~xxxx~~ include extent under withered crops and exclude waste charged. This is of course exactly the reverse of what is required and in order to remove a small but obvious error waste charged should be included and withered crops excluded.

Revised form — I E Statement of areas irrigated under (Major) Class I + Class II works

System	Month	area under irrigation	average discharge in cft per second at head	average discharge in cft per second utilized	Duty at head	Duty utilized	Total discharge utilized in million cft	Total area irrigated	Monthly rainfall averaged of stations in irrigated land	Remarks
1	2	3	4	5	6	7	8	9	10	11
	June							….. areas 6 months crops		[Note Column 3 has not been divided into flow + lift as the accuracy of the figures given in some instances appears doubtful + as it does not serve any really useful purpose. If necessary it may be subdivided.]
	July							- - - 4 months crops		
	August							- - - 10 months crops		
	Septr									
	Octr									
	November									
	December									
	January									
	February									
	March									
	April									
	May									

5

13.

5. This revised form will show the actual number of acres irrigated during each month and the amount of water used in doing so. The actual usefulness of this will depend on the accuracy of the figures -- supplied but assuming them to be correct the return will be of the greatest use in showing not only the total quantity of water used but also the period and extent of maximum demand.

ZWSS 14/11/07

HW 14/11/07

Public Works (Irrigation) Department.

68

Statement I E of Administration Report.

A note by the Chief Engineer for Irrigation is appended which it is hoped points out clearly the uselessness of the return in its existing form and suggests the adoption of another one. Will Revenue kindly say if the information asked for in para 3 can be supplied for all Major Works and also the following Minor Works for which Capital and Revenue Accounts are kept.

Cumbum Tank

Thadapalli channel

Arkenkota Channel

Kalingarayan Channel

Chembrambakkam Tank

Madras Water Supply & Irrigation extension.

I do not think any further explanation is necessary and I need only add that it is hoped that all information furnished will be unimpeachable. An attempt to make use of the crop cultivation statements as published in the District Gazettes leads in some cases to hopeless confusion. If approved in Revenue, India will be asked to accept this form.

[signature]
14/11/07

Irrign. U.O. 401 D / 14.11.07

To Revenue Department U.O.

Rev. Dept.

S. CRETARY TO GOVERNMENT 16 NOV. 1907 REVENUE DEPARTMENT

REVENUE-C 1635

To Under Secretary.

As the Board furnishes the figures, accounts &c required for the P.W. (I) Dept. Admn. Report, it is submitted that the opinion of the Board may be called for. Please see Endt. subm. for approval.

Recd. Reg. } 16.11.07

19.11.07.

20.11.07

REVENUE DEPARTMENT.

Rev. No. 6535 C/07-1
22.11.07

Board of Rev. (Rev. Sett.) u.o. for favour of remarks.

A — their present page 10 after file

Board's U.O reply No. 84 dated 20th March '08.

The Director of Land Records, a copy of whose U.O reply is submitted herewith, points out the difficulties in the way of compiling the information required by the Chief Engineer and the practical inutility of such information even if compiled. His arguments are based on the assumption that every piece of land irrigated in a month, whether for the first time or a second, third or fourth time, should be brought to account in each month in which irrigation is carried on, so that the same extent will be repeated every month as long as its irrigation continues. If it were so, the Director would be right. The Board presumes, however, that what the Chief Engineer wants is the extent of land newly brought under irrigation every month together with a specification of the duration of the crops grown on the land. This information could be furnished without difficulty, but even for this purpose, a new form of village account would be necessary in which the extents irrigated from the sources, for which statistics are required by the P.W.D, would have to be entered month by month together with information as to the duration of the crops, and the present cultivation account would not be suitable to this end.

2. The object of the P.W.D. appears to be that, with a return such as the one above referred to showing the actual number of acres irrigated in a

14P

month, they should be able to calculate as accurately as possible the number of acres irrigated by each cubic foot of water flowing per second. The Board, however, doubts the possibility of arriving at any satisfactory result without definite data showing the duty of water for each kind of crop and the duty differs considerably not only according to the crop but also according to the nature of the soil and the conditions of rainfall. Unless the quantity of water required in each of these varying circumstances has been ascertained before-hand by carefully conducted experiments, statistics showing the quantity Registered at the head cannot be compared in P.W.D statement I-E with the quantity actually necessary for each crop; nor can the need for such experiments be held to be superseded by the proposed new Village Account. The Board thinks that experiments to this end over limited areas and in selected localities should be conducted by the P.W.D. on the lines adopted at the Hagari farm and should be reduced to the form of definite data and that until this is done the proposed return would be of little use.

[signature]

SECRETARY TO GOVERNMENT 23 MAR 1908 REVENUE DEPARTMENT

To the Secretary to Government, Rev. Deptt.

SECRETARY TO GOVERNMENT 24 MAR 1908 REVENUE DEPARTMENT

REVENUE-C 0476

Recd Regd } 23.3.08

Print this at A or page 8

Copy of U.O. reply from N.E.Marjoribanks Esq.,I.C.S., Director of Land Records,dated 16th January 1908:-

I have spoken to karnams about this and to the only Tahsildar I met who had an intimate knowledge of Village accounts. There is no statement or account now prepared which gives the area under irrigation each month: neither is there one which shows how long any particular part is under irrigation in any year. Village account No.1 only gives the area cultivated and irrigated each month, e.g., if a field is cultivated and irrigated in June, it is not repeated in the account for July or any subsequent month. Moreover, it is not written by source. The adangal (No.2) and account No. 2 D are both annual statements. What we are asked to do by the P.W.D. is, in effect, to prescribe for all fields under class I works or 6 other works a monthly adangal from which the areas monthly irrigated could be totalled and from which (by another posting) the areas under irrigation for different periods could be ascertained. I need hardly say that the labour of compiling such an account would be immense. Not only would the scriptory work be great, but every field in the villages concerned would have to be inspected every month. Nothing less would provide the unimpeachable information asked for. If it is thought necessary to compile it, special karnams should be appointed for the purpose- existing establishments could not do the work honestly.

2. As regards the need for the information, I hesitate to say much, but would venture to suggest that this demand represents just that vain striving after mathematical accuracy in irrigation statistics that the Government of India and the Secretary of State expressly disowned many years ago (Vide pages in B.P.200, dated 5th May 1900) - Personally, I am extremely sceptical as to the information,

P.T.O.

if gathered, ever being put to any practical use.

Ko
21-3-08

97

To Under Secretary

The information required for Col: 3 of the proposed P. W. D. Form on p. 5 supra "area under irrigation in each month can be furnished by Tahsildars to Ex. Engrs. without much difficulty: in Govt villages the Karnam can compile it from his cultivation note-book, and the difficulty will arise only in those Zemindary villages in which the note-book is not ~~properly~~ kept. The information will be useful to P. W. D. for all approximate calculations.

p. 15 of G. O. 72 W. 10-1-07

2. The information required for Col. 9 of the P. W. D. form cannot be conveniently supplied

p. 5 supra

[illegible]
28. 3. 08

Secretary

What the P.W. Dept. want is information which will enable them to ascertain the exact amount of water required by every acre of land. In order to ascertain this they ask us to supply them with a statement showing lands actually under cultivation during each month such lands

p 4 C.F. to include

(1) Lands actually transplanted

(2) Lands used for seed beds

(3) Lands watered for ploughing

They further ask us to provide them with information as to how much of this is first, second and

p 5 CF double crop. They have sent us a form in which two columns are provided for these classes of information. Col 3 is to show the area under irrigation each month Col 4 the total area irrigated with particulars of the length of time the crop was on the ground.

2. The Board and the Director of Land Records to whom the form was referred for remarks disagree as to the information required in Col 3. The Board thinks that it is the new cultivation

p 8 CF each month which should be shown in Col 3, the

p 10 CF Director thinks it is the total ~~information~~ cultivation during the month. The Director's view is, I think, the correct one. The Board's interpretation would not enable the duty to be calculated

3. There is as pointed out by the Director and the Board at present no form in use which readily gives the area under irrigation each month nor is there one which shews how long any particular field is under irrigation each year. Approximate information could however be obtained from the Karnam's inspection note-book prescribed in the Manual of Village Accounts

W as embodied in G.O. No 92 Rev. 10th Jan. 1907.

p. 15 Repts. The note book has columns which shew

(1) The area of the field (Col 3)
(2) Extent cultivated (Col 7)
(3) The month in which cultivated (Col 4)
(4) The month in which harvested (Col 8)
(5) Name of crop (Col 5)
(6) Source of irrigation (Col 6)

It is therefore possible ~~by~~ to ascertain by laboriously posting the area under ~~irrigation~~ wet crop. in any particular month and also from Cols 4 and 8 the length of time the crop was on the ground. The source is also given in the notebook. But as pointed out by the Director the resulting work involved would be tremendous and further when completed would only give the area under wet crops which ~~in that~~ in any particular month does not of necessity take water. To ascertain whether a field was actually irrigated or not during the month would require field to field inspection. Further the Karnam does not include in his notebook details of fields actually not cultivated i.e. sown. The PWD ask

12

Paras 3 of their note at page 4 supra

~~for~~ that land watered for ploughing should be included. They also ask that land under withered crops should be excluded. There is less difficulty about this as the area of land in which remission is granted could be subtracted from the total.

~~3~~ 4 The addition of any one account to the large number with which the Karnam has to deal is I submit not to be deprecated. The Board make a sound point when it observes that the duty must vary according to the crop and also according to the nature of the soil and the condition of rainfall. The additional factor is the energy and knowledge ~~or otherwise~~ of the ryot. I submit that this may be told that we cannot accept the form.

[illegible]
2.4.08

Better put the notes in print & resubmit.
[illegible] 3.4.08

REVENUE DEPARTMENT.

To Under Secretary.

The notes are submitted in print as directed.

To Secretary

W.L. 10-4-08 S.A. 11-4-08

R. 11.4.08

This file has not been submitted to the Hon: Member in charge of Revenue because there seems to be some room for doubt what informn. is needed in Col. 3 of the form at p. 2. The file may therefore first go back to PWD I for further considern. It will be seen that there wd. be very great difficulty in accepting the revised form proposed.

A.G.
21.4.08

PWD I ...

Rev. No. 1635 C-2 (B) / 22 4 08

REVENUE DEPARTMENT.

88

To Sec

What is required in column 3 on p 2 of these notes is the area to which water is being supplied each month. The need for this knowledge is extremely great, take for instance the Periar;— Here we have a large quantity of water available but can only supply it at a relatively slow rate & we have no really trustworthy information as to what each cusec is doing in any month & all proposals for extending the area by distributing the cultivation ~~more~~ more evenly throughout the year are based upon assumptions & suppositions

The same thing occurs with all calculations of the water to be let out of the Cauvery reservoir for old irrigation & second crops, we get duties varying from 6 acres to the cusec in June to 240 in Nov

We only know (& that very

doubtful) what the total area cultivated is, month by month & we have no information as to how much of this area has been reaped and is out of cultivation for the time being.

The information we are able to put in our administration reports is most meagre and untrustworthy & this is probably one of the main causes of the desire of the Govt of India that the P.W.D should assess the irrign revenue.

We have recently done all that is possible to reduce the work of the village officer in preparing returns of irrigation revenue, more especially by consenting to the abolition of the "Incidence Table".

We are handicapped through the revenue accounts being for the Fasli & the irrigation accounts for the official

This refers evidently to the revision of (village) irrigation accounts referred in para 1 (vii) of G.O. 72/10107 p. 96-97 the subject has not yet come to Revenue Dept. [illegible] 23-5-08

Public Works Department
(Irrigation Branch).

year & further because we cannot divide our crops into hard & fast 'rabi' and 'kariff' but if the Board are shewn the irrigation statistics prepared in the Panjab where the area under every large distributary is returned separately it will be seen how modest our demands are compared with what they might be

F.W.S.
12/8/08

To begin with I must deprecate the "non possumus" attitude taken by the Rev Board on this question. With a view to improve our systems of distribution of water & especially to minimize waste of water the Irrigation Dept are making special arrangements for gauging ~~our~~ canals & distributaries with a view to ascertaining the "duty" of water on which depends the areas to be ultimately adopted not only under existing irrigation

systems but also under future Projects.

The question has I may point out reached an acute stage in the Godavery & Kistna Deltas where the area irrigated has been steadily increasing for years past and has now rendered necessary immediate steps not only for the purpose of providing for future extensions but for the satisfactory irrigation of the present area.

The present system of water distribution in the Madras Presidency has served its purpose well enough in the past so long as the supply of water has been sufficient to make economical distribution of minor importance but this cannot be allowed to go on indefinitely especially in the larger systems where extensions are still taking place as in the deltas mentioned above & in the Periyar Project area & elsewhere.

There is therefore urgent need in the Irrigation Department for consid

data as to the duties now being obtained from our work and it is useless our making elaborate observations of discharges unless we have reliable figures of the areas irrigated with which to compare them.

As matters stand at present we are dependent upon the Rev. Dept. to supply us with the latter information and I have no doubt that we shall be able to come to some arrangement.

Certain information we must have & even if it means extra establishment it will have to be provided in P.W.D. if not in Rev.

I understand that the information asked for for Column (3) can be given, i.e. the total area ~~[illegible]~~ under irrigation in each month but that it will ~~[illegible]~~ involve much scrutiny work. As a general rule field to field inspection to ascertain if any particular field took water during the month would not be necessary as it may be taken for

granted that ~~all~~ no land under a crops requiring irrigation at all would go without water for a whole month. It is more important that lands being ~~ploughed~~ watered for ploughing should be included as such lands take more water then than at any other time but as in most cases lands ploughed in any month would also be transplanted in the same month not much additional labour would be involved in entering those ploughed though not transplanted. So far as I can see therefore the information for Col 3 is available from the Karnams note book & only requires abstracting.

Page 3 of Note-book — This is already partly done in order to fill up Village a/c No 1. ~~& the~~ Entire information required would not apparently involve very much labour. but as to this the Revs will be the best judge.

As regards Column 9 as the Note book already has to contain the name of the crops could not the Karnam without much difficulty enter at the same time against "Paddy" for instance whether it is a 3 months, 4 months, 5 months or 6 months crop?

13/

148

It is also pointed out that under all our irrigation systems at present the great bulk of crops is "Paddy" of different kinds at any rate in regard 1st crops.

Will Bo now kindly re-consider the question & see how they can best help us to obtain the statistics which we want and which it may be taken for granted we must obtain somehow or other during the coming irrigation season.

[initials]
15/5/08

To
Revenue U.O.

SECRETARY TO GOVERNMENT
16 MAY 1908
REVENUE DEPARTMENT
Dated 16-5 1908

REVENUE-C
2191
874C

Reed 16.5.08
Reed 18.5.08

Revenue Dept

To Under Secretary.

Submitted for orders.

2. Reference is solicited to the Under Secretary's note, dated 2.4.08 at page 5 supra in which the question as to ~~Statue~~ how far it is possible to furnish the required information from the Kurnam's inspection-notebook is discussed at length

It will be observed that it was considered therein that to furnish the information asked for would involve much ~~[illegible]~~ Scriptory work, apart from the fact that the area watered for ploughing would not be known.

3. As regards the Scriptory work the Public Works Dept. say that even if it means extra establish-ment, it will have to be provided in the P.W. Dept., if not in Revenue.

4. As regards the area ~~ploughed~~ watered for ploughing, the Karnam may, it is submitted, be instructed to note, in the course of his inspection, in the column of remarks ~~[illegible]~~ against the fields ploughed ~~[illegible]~~ ~~[illegible]~~, with the aid of water from an irrigation source, the name of the source from which water was taken and the extent so ploughed. This the Karnam used to do in adangals (Village Account No. 2) prior to the introduction of his inspection note-book and it will, it appears, be not a

difficult task for the Village Kurnam to do in his notebook. The same ~~course~~ course may also, it is submitted, be adopted for Seedbeds watered from an irrigation Source.

5. As the Public Works Dept desire that the above information is required for their purposes, it appears that Revenue should furnish ~~the~~ it ~~information~~. The question then for consideration is whether any extra establishment would be required for the purpose. It seems unnecessary to discuss this point at present; the file may, it is submitted, be sent unofficially to the Board of Revenue for remarks as to (i) how the instructions issued in G.O. No. 72 Rev of 10.1.07 for the maintenance of the Karnam's inspection notebook may be revised with a view to furnishing the statistics required by the P.W.D. and (ii) whether any establishment will be required for the purpose.

X

Wh
21.5.08

Statistics showing areas irrigated by each distributary in a year are now available. For help in ascertaining the duties obtained by water under the larger irrigation systems the P.W.D. want the Rev. Dept. to furnish them with statistics of the areas under irrign in each month of a year. It wd. not only require large special establishments for field-to-field special inspection but it wd also be impracticable to compile strictly accurate statistics. But the P.W.D.(I) state that field-to-field inspection to ascertain if any particular field took water during the month will not be necessary as it may be taken for granted that no land under a crop requiring irrign at all would go without water for a whole month. There are several dry crops which require only an occasional flooding when rains fail. A wet paddy crop may (in exceptional cases) require no artificial irrign for a whole month if there are very heavy rains in the month. The number of floodings will vary with the crop, the rainfall and other circumstances. ~~[illegible]~~ These and other different

prove that it would be impracticable to obtain strictly accurate particulars of irrgn for the purpose of working out duties of water on a large scale. But if the aim is only to get roughly approximate statistics, it is submitted the Revenue Department may undertake to supply them with a small addl to the Karnam's work, which may take a few hours in a small village and one or two days in big villages in a year, in the manner described below.

2. As the P.W.D (I) require the information for the purposes of an annual statement, no statistics need be despatched to them each month but only once a year. and the necessary compilation can be done by the Karnam along with other village irrgn returns which the Tahr sends direct to the Board's office where the Karnam's irrign accounts are tabulated & published. If the Board requires any addl establishment for this for its office particular return it will apply in due course.

3. As to the manner in which the Karnam is to work out the figures please see page 20 below, or which

p. 15 of G.O. 72 / 10-1-07

is given a statement showing sample entries in Cols. 1, 4, 6, 7, 8 & 1[illegible] of the Karnam's inspection note-boo[k] As the note-book (Cols. 4 & 8) shows i[n] what month each irrigated fields i[s] cultivated and harvested, the exte[nt] of irrigated crops [that] ~~standing~~ on the groun[d] in each month of the year can be post[ed] into a posting statement, a sample o[f] which is given on page 21 below. A[n] abstract of this posting statement for eac[h] village irrigated by the [large] ~~Irrigation System~~ [irrigation works] wi[ll] be sent up to the Board's office & the Boa[rd] will furnish the S. Ir. S (I) with the neces[sary] information to be embodied in Col. 3 of t[he] proposed annual statement I E on p. [...] of this note file above. As already observe[d] these figures will be useful for working out duties of water only approximately.

~~p. 2. above~~

4. As regards Col: 9 of the proposed S. Ir. S (I) form I E, it is submitted that separate details of extents und[er] 3 months, 4 months, 5 months crops &c. [will] only be necessary if Col: 3 of the form had showed only the extent that [was] actually sown or cultivated in eac[h] month. But as it is proposed above to show in the Col: 3, the extents of irrigated a[...]

that actually stood on the ground in each month whether such crops were sown in the month or in previous months no further detailed information would be necessary in Col: 9. for the purpose of calculating duties of water. It will be seen that even the particulars of extent under 3 months, 4 months &c crops will have to be compiled from ~~from~~ Cols: 4 & 8 of the Karnam's inspection ~~book~~ note book; but the Karnam will have to prepare another posting statement and another abstract [together these particulars]. But it is believed that the P. W. D (I) will agree that the particulars for Col: 9 will be unnecessary for working out the duties of water if Col: 3 shows the particulars as indicated above.

(as suggested in P.W.D (I))
Not by the Karnam noting at the time of inspection (as a matter of guess work) whether each crop is a 3 months, 4 months &c crop, but by a reference to

5. If the P. W. D. (I) agree with the above, it is submitted that the Board can be asked to embody the necessary instructions ~~[illegible]~~ in the revised instructions for the preparation of village irrigation returns, which, it is understood, are now being framed by the Board in consultation with the Chief Engineer.

B.P. $\frac{200}{5\text{-}5\text{-}00}$ R. S. (~~F.R. Jul-45~~)

Sd

20

Statement showing sample entries that may appear in Cols: 1, 4, 6, 7, 8 + 16 of the Karnam's inspection note-book (P. 15 of G.O. 72 / 10-1-07)

Consecutive Survey Number and Sub division	Month in which Cultivated	Actual source of irrigation	Extent Cultivated	Month in which harvested	Remarks. (H.B. . . . (a) [illegible] loss of irrigation in subsequent month of fields previously cultivated without irrigation [illegible])
Col: 1 of the Karnam's note book	Col: 4	Col: 6	Col: 7	Col: 8	Col: 16
1	July	Canal	A. C. 2 - 40	December	
2	July	Canal	3 - 50	November	
3	September	—	4 - 05	December	
4	August	Canal	1 - 80	January	
5	September	—	2 - 30	January	Irrigated in Dec (Canal) 1-53.
6	October	—	3 - 40	February	
7	July	Canal	2 - 25	October	
8	September	Canal	4 - 32	December	
9	November	—	5 - 26	March	
10	July	Canal	4 - 23	December	
11	August	Canal	3 - 14	December	
12	August	Canal	2 - 16	January	
13	Septr.	Canal	1 - 85	February	
14	October	—	3 - 22	March	
15	October	—	1 - 64	March	
16	Septr.	Canal	3 - 14	February	
17	July	Canal	1 - 55	December	
18	July	Canal	2 - 47	November	
19	August	Canal	2 - 23	November	
20	August	Canal	1 - 68	January	
21	Septr.	—	4 - 32	January	
22	October	—	3 - 58	March	
23	Novr.	—	2 - 64	February	
24	July	Canal	2 - 45	December	
25	August	Canal	4 - 25	January	

6 10 8 12 10

21

Posting statement showing the extents on which irrigated crops stood on the ground in each month of the year - - - -, Compiled from the Karnam's inspection note-book.

	July	August	Septr.	October	Novr.	Decr.	Jany.	Feby.
	A. c.	A. c.	A. c.	A. c.	A. c.	A. c.	A. c.	A. c.
1	2-40	2-40	2-40	2-40	2-40	2-40		
2	3-50	3-50	3-50	3-50	3-50			
4		1-80	1-80	1-80	1-80	1-80	1-80	
5						1-53	1-53	
7	2-25	2-25	2-25	2-25				
8			4-32	4-32	4-32	4-32		
10	4-23	4-23	4-23	4-23	4-23	4-23		
11		3-14	3-14	3-14	3-14	3-14		
12		2-16	2-16	2-16	2-16	2-16	2-16	
13			1-85	1-85	1-85	1-85	1-85	1-85
16			3-14	3-14	3-14	3-14	3-14	3-14
17	1-55	1-55	1-55	1-55	1-55	1-55		
18	2-47	2-47	2-47	2-47	2-47			
19		2-23	2-23	2-23	2-23			
20		1-68	1-68	1-68	1-68	1-68	1-68	
24	2-45	2-45	2-45	2-45	2-45	2-45		
25		4-25	4-25	4-25	4-25	4-25	4-25	
	×	×	×	×	×	×	×	
Total	18-85	34-11	43-42	43-42	41-17	34-50	16-41	4-99

91½

REVENUE DEPARTMENT. 230

Secretary

p10 above — Mr Smith points out the importance of the information now asked for to the MoD which he considers so essential that if extra establishment has to be provided, MoD are prepared to pay for it. MoD have now made clear exactly what they want and something can be done. I submit to omit them in the letter.

2. It is now clear that ~~what~~ what is wanted is the total cultivation during the month. The forms prepared by ~~the~~ Dy Regr in pp. 20–21 of the notes shows how it is can be abstracted from the Karnam's notebook. Mr Smith points out that ~~though~~ the presumption is that a ~~crop~~ cultivated crop takes location every month during which ~~crop~~ it is standing on the ground and that field to field inspection would not therefore be necessary. If this is the case, ~~both~~ the abstract on p 21 would except as regards lands ploughed but not cultivated during the month to which reference is made below ~~would~~ be ~~be~~ sufficiently accurate for MoD purposes. As regards the second abstract referred to in para 5 of the Dy Registrar's note, Mr Smith with whom I have discussed the matter, says that it is not of importance and that provided we can give MoD the total cultivation each month, the length of time the crop is on the ground does not matter.

 24P

TV

3. One further point arises. The Karnam's note book (see page 15 of G.O. No. 72 Rev. dated Jan 10th 1907) gives the month in which the crop was cultivated only. Plots point out that it is far more important to them to know when the field was ploughed, as it is between ploughing and transplanting that most water is as a rule used. It frequently happens however that the field is ploughed after rain and not with the aid of water from the irrigation source. It would hardly be sufficient, therefore, to change the heading of Col 4 from "month in which cultivated" to "month in which ploughed". Mr Smith points out that lands ploughed in any month are usually transplanted in the same month. The best plan

p 12 of notes

p 12 of notes

It appears to be for the Karnam to enter in the remarks column the month in which the land was first ploughed with water from the irrigation source, if it differs from the month in which the land was cultivated.

4. Plots [I] would prefer the abstract monthly. Its preparation must involve additional clerical work on the part of the Karnam, the amount of which can only be discovered by experience. It may probably mean the appointment of assistant Karnams in some of the bigger wet villages under the large irrigation systems. It is however possible that the additional labour in this direction

may be saved ~~[illegible]~~ in other ways. N. Singh refers

p 8. to the abolition of the Incidence table, while

with reference to the simplification of irrigation

W accounts referred to in para 1 (vii) of G.O. No 92

Revenue dated Jan 10th 1907.

5. ~~In the light of PWD(I)'s~~ The Board

may perhaps be asked for further ~~[illegible]~~ remarks in the

light of the additional information now furnished

by PWD(I).

Illegible initials (signature)

29.5.08

Please have the notes put in type up to date & link this file with the B.P. wh has been recd re-garding the revision of No 8 Village acct & its Enclosures. Please expedite resubmission of the two linked files.

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2.6.08

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